

**UNIT TEST**

**STANDARD- 12**

**SUBJECT-CHEMISTRY**

**CODE-052**

**Total Marks:25**

**Time: 1-Hour**

**Medium: English**

**PART-A**

- **Select the proper choice and answer the following multiple choice questions. (Each question is of 1 mark) [09]**

1. Maximum covalency of nitrogen is \_\_\_\_\_.  
(A) 3            (B) 5            (C) 4   (D) 6
2. Which of the following are peroxyacids of sulphur?  
(A)  $\text{H}_2\text{SO}_5$  and  $\text{H}_2\text{S}_2\text{O}_8$             (B)  $\text{H}_2\text{SO}_5$  and  $\text{H}_2\text{S}_2\text{O}_7$   
(C)  $\text{H}_2\text{S}_2\text{O}_7$  and  $\text{H}_2\text{S}_2\text{O}_8$             (D)  $\text{H}_2\text{S}_2\text{O}_6$  and  $\text{H}_2\text{S}_2\text{O}_7$
3. Which of the following alcohols will yield the corresponding alkyl chloride on reaction with concentrated HCl at room temperature?  
(A)  $\text{CH}_3\text{CH}_2\text{—CH}_2\text{—OH}$             (B)  $\text{CH}_3\text{—CH}_2\text{—CH}(\text{CH}_3)\text{—OH}$   
(C)  $\text{CH}_3\text{—CH}_2\text{—CH}(\text{CH}_3)\text{—CH}_2\text{OH}$             (D)  $\text{CH}_3\text{—CH}_2\text{—C}(\text{CH}_3)_2\text{—OH}$
4. Which of the following alkyl halides will undergo  $\text{SN}^1$  reaction most readily?  
(A)  $(\text{CH}_3)_3\text{C—F}$             (B)  $(\text{CH}_3)_3\text{C—Cl}$   
(C)  $(\text{CH}_3)_3\text{C—Br}$             (D)  $(\text{CH}_3)_3\text{C—I}$
5. Which of the following compounds will react with sodium hydroxide solution in water?  
(A)  $\text{C}_6\text{H}_5\text{OH}$             (B)  $\text{C}_6\text{H}_5\text{CH}_2\text{OH}$   
(C)  $(\text{CH}_3)_3\text{COH}$             (D)  $\text{C}_2\text{H}_5\text{OH}$
6. Which of the following is benzylic alcohol?  
(A)  $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{OH}$             (B)  $\text{C}_6\text{H}_{11}\text{CH}_2\text{OH}$   
(C)  $\text{C}_6\text{H}_5\text{CH}(\text{OH})\text{CH}_3$             (D)  $\text{C}_6\text{H}_5\text{CH}_2\text{CH}(\text{OH})\text{CH}_3$
7. Cannizaro's reaction is not given by \_\_\_\_\_.  
(A) 1-Methylcyclohexane carbaldehyde            (B) Benzene carbaldehyde  
(C) Methanal            (D) Ethanal
8. In Clemmensen Reduction carbonyl compound is treated with \_\_\_\_\_.  
(A) Zinc amalgam + HCl            (B) Sodium amalgam + HCl  
(C) Zinc amalgam +  $\text{HNO}_3$             (D) Sodium amalgam +  $\text{HNO}_3$
9. The correct order of increasing acidic strength is \_\_\_\_\_.  
(A) Phenol < Ethanol < Chloroacetic acid < Acetic acid  
(B) Ethanol < Phenol < Chloroacetic acid < Acetic acid  
(C) Ethanol < Phenol < Acetic acid < Chloroacetic acid  
(D) Chloroacetic acid < Acetic acid < Phenol < Ethanol

## PART-B

### SECTION A

- **Answer any three of the following questions. (Each question is of 2 marks) [06]**

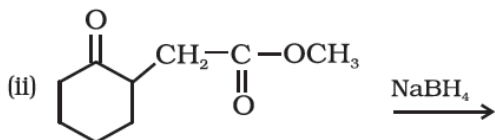
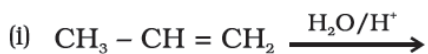
1. How the following conversion can be carried out?

*tert*-Butyl bromide to isobutyl bromide

2. Explain Wurtz Fittig reaction giving suitable example.

3. Give bromination reactions of phenol under different conditions.

4. Write structures of the products of the following reactions:



5. Write the structures of the following compounds.

(i)  $\alpha$ -Methoxypropionaldehyde

(ii) 2-Hydroxycyclopentane carbaldehyde

### SECTION B

- **Answer any two of the following questions. (Each question is of 3 marks) [06]**

6. Complete and balance the following reactions:

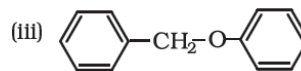
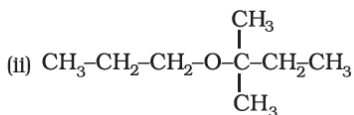
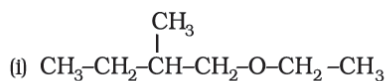
(i).  $\text{Cu} + \text{HNO}_3(\text{dilute}) \rightarrow$

(ii).  $\text{Zn} + \text{HNO}_3(\text{conc}) \rightarrow$

(iii).  $\text{P}_4 + \text{HNO}_3(\text{conc}) \rightarrow$

7. What are ambident nucleophiles? Explain with an example.

8. Give the major products that are formed by heating each of the following ethers with HI.



### SECTION C

- **Answer any one of the following questions. (Each question carries 4 marks) [4]**

9. Explain cross aldol condensation reaction.

10. Answer the following questions as asked:

(i). Give two examples to show the anomalous behaviour of fluorine. (2 marks)

(ii). How are  $\text{XeO}_3$  and  $\text{XeOF}_4$  prepared? (2 marks)

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